

RESEARCH PATENT SPECIFICATION



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684,788

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COMPLETE SPECIFICATION.

A Face Piece for use with Gaseous Anaesthetic Apparatus.

We, WILLIAM EDMONDSON, of Holmfild House, Oxenhope, Keighley, in the County of York, and WILFRED JONES, of 1A, Elm Street, Oxenhope aforesaid, both British

Subjects, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention relates to a nose piece and head band for use in connection with gaseous anaesthetic apparatus and it comprises a nose piece connected by a flexible and extensible tube to a coupling which is supported by a curved strap that is attached by sprung wires to temple pads, the corrugated or other supply tube to the machine being attached to a tapered fitting forming part of the coupling.

Attached to the temple pads of the head band is a flexible strap which holds the nose piece in place by being secured to studs thereon. This strap keeps the nose piece firmly in position and also secures the head band to the patient's head, the arrangement being such that the nose piece can be securely fastened to the patient's head and any pull from the corrugated or other supply tube from the machine to the head band is not transmitted to the nose piece.

A feature of the invention consists of a very light expiratory valve situated in a valve casing that screws into the nose piece and can be firmly sealed without putting any excessive strain on to such valve which may result in distortion and prevent the valve from working correctly when no load is exerted on it.

In the accompanying drawings:

Fig. 1 is a view of the nose piece and head band in position on what might be a patient's head shown more or less diagrammatically;

Fig. 2 is a section taken through the expiratory valve and drawn to a larger scale; and

Fig. 3 is a section taken through a temple pad.

A indicates the nose piece, B the head band, C the flexible and extensible tube, D the coupling, E the sprung wires and F the temple pads.

Attached to the nose piece A is an inflatable pad A', and attached to the temple pad F is a rubber pad F'. The nose piece A is attached to the temple pad F by a rubber or other like extensible strap G, such straps being formed with holes G' which fit over a stud F' on the pad F for fixing and adjustment purposes.

The expiratory valve H consists of a thin disc which may be made of mica and is adapted to rest by gravity on an annular knife-edged seating J in a valve casing K that screws into the nose piece A.

Extending upwardly from holes formed in the valve casing are a number of rods L that project into the bore of the valve casing and prevent the valve from rubbing thereon. These rods enter or pass through holes in an annular plate M that is supported on the top of the valve casing.

Depending from the plate M are a number of pins N which limit the maximum lift of the valve and are pointed to prevent the valve from adhering to them when moisture is present.

Screwed on to the valve casing is a screw cap O formed with a locating pin O' for a spring O' which terminates in proximity to the valve H.

The valve cap can be raised and lowered by turning it in one direction or the other and it is provided with a screw O' which by engaging with the top of a recess K' prevents the cap from being removed. In this position the valve H is in the "no load" position as the spring O' is clear of

the valve and the effort required to exhale is very small. As the cap is fully screwed down, the spring O² comes into action and increases the valve loading and consequently increases the effort required to exhale.

When the cap is screwed down the part O⁴ seats on a shoulder K¹ of the valve casing and seals the valve completely and thus prevents exhalation.

The important feature of this expiratory valve arrangement is that it can be securely sealed without putting any excessive strain on the very light valve H which might result in distortion and prevent the valve from working correctly in the "no load" position.

What we claim is:—

1. A nose piece and head band for use in connection with gaseous anaesthetic apparatus in which the nose piece is connected by a flexible and extensible tube to a coupling which is supported by a curved strap that is attached by sprung wires to temple pads, the corrugated or other supply tube to the machine being attached to a tapered fitting forming part of the coupling.

2. A nose piece and head band accord-

ing to Claim 1 in which the temple pads of the head band are attached to a flexible strap which holds the nose piece in place by being secured to studs thereon, the said strap keeping the nose piece firmly in position and also securing the head band to the patient's head, the arrangement being such that any pull from the corrugated or other supply tube from the machine to the head band is not transmitted to the nose piece.

3. A nose piece and head band according to either of the preceding claims in which a very light expiratory valve is situated in a valve casing that screws into the nose piece and can be firmly sealed without putting any excessive strain on to such valve which may result in distortion and prevent the valve from working correctly when no load is exerted on it.

4. A nose piece and head band having its parts constructed, arranged and adapted to operate substantially as described with reference to the accompanying drawings.

Dated this 30th day of June, 1951.

APPLEYARD & CROSSLEY,
41, Commercial Street, Halifax,
Agents for the Applicants.

PROVISIONAL SPECIFICATION.

A Face Piece for use with Gaseous Anaesthetic Apparatus.

We, WILLIAM EDMONDSON, of Holmfild House, Oxenhope, Keighley, in the County of York, and WILFRED JONES, of 1A, Elm Street, Oxenhope aforesaid, both British Subjects, do hereby declare this invention to be described in the following statement:

This invention relates to a nose piece and head band for use in connection with gaseous anaesthetic apparatus and it comprises means whereby the nose piece can be securely fastened to the patient's head and which will eliminate any pull from the corrugated or other supply tube from the machine to the head band, and it consists in connecting the nose piece by a flexible and extensible tube to a coupling which is supported by a curved strap to which is attached, spring wires, at the ends of which are temple pads. The corrugated or other supply tube to the machine is attached to a tapered fitting forming part of the coupling.

Attached to the nose piece is a flexible strap which holds the nose piece in place by being secured to studs on the temple pad. This strap keeps the nose piece firmly in position and also secures the head band to the patient's head.

A feature of the invention consists of

an expiratory valve that is mounted on one side of the nose piece and comprises a valve seat that is rigidly fixed in the nose piece casing and is formed with passages and terminates in an annular seating with a knife edge and screwed into the centre of such seating is a valve guide terminating in a cap in which is mounted a rubber thrust ring. Situated between such ring and the seating is a thin metal disc valve that is slidably mounted on the valve guide and interposed between such disc valve and the cap is a coil spring which tends to press the thin disc valve on to the seating, the arrangement being such that when the patient exhales the air pressure pushes the valve off its seating and allows the air to escape between the valve seating and the cap. The pressure required to lift this valve can be increased by screwing the cap downwards the effect of which is to increase pressure of the lower end of the spring on to the disc valve. As the cap is screwed further down the circulation suction thrust ring eventually forces the disc valve down on to its seating. The thrust ring is made of a compressible material in order that the disc valve will be evenly forced down on to its seating.

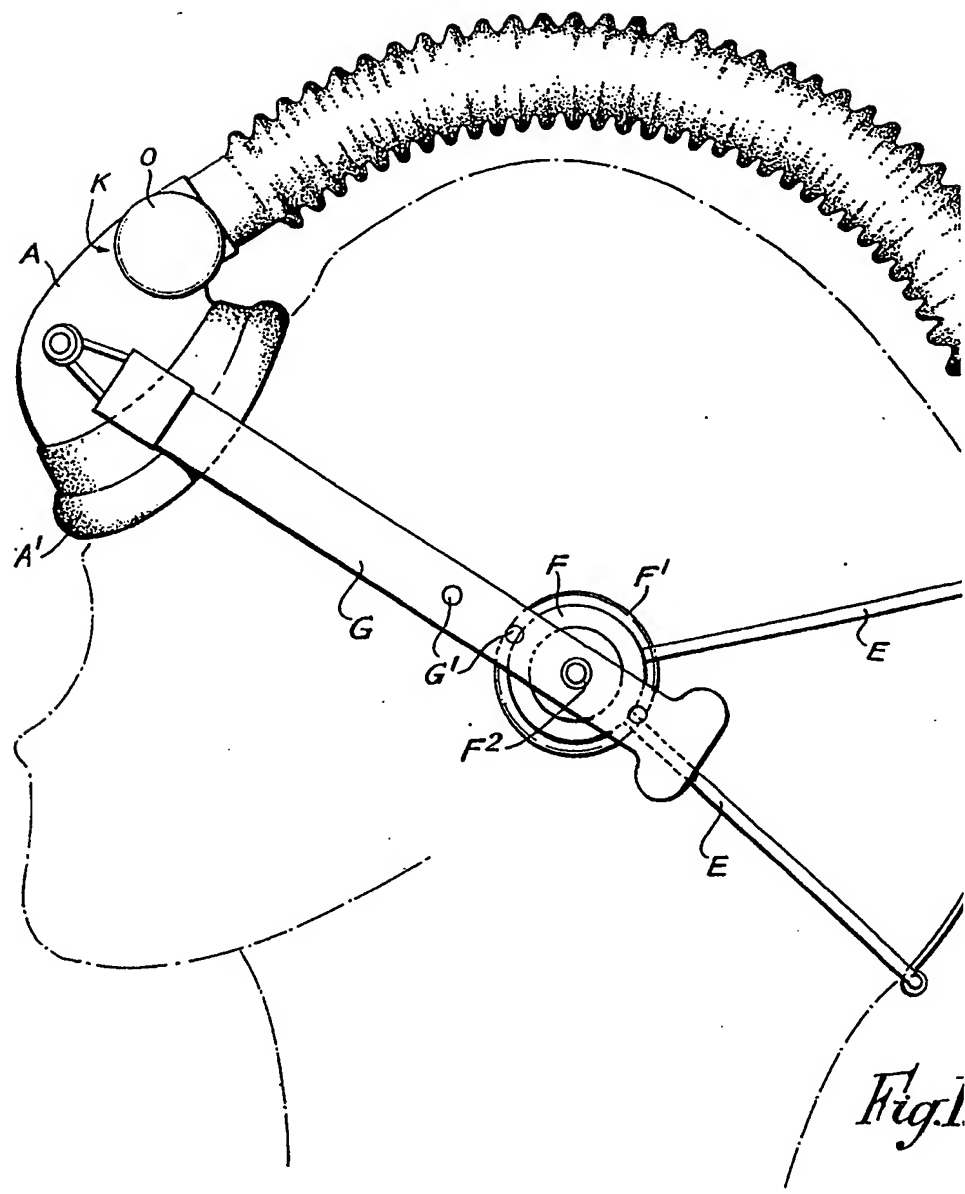
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The exterior of the cap may be provided with a knurled edge so that it may be turned in one direction or the other.

Dated this 3rd day of July, 1950.
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Agents for the Applicants.

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1 SHEET This drawing is a reproduction of
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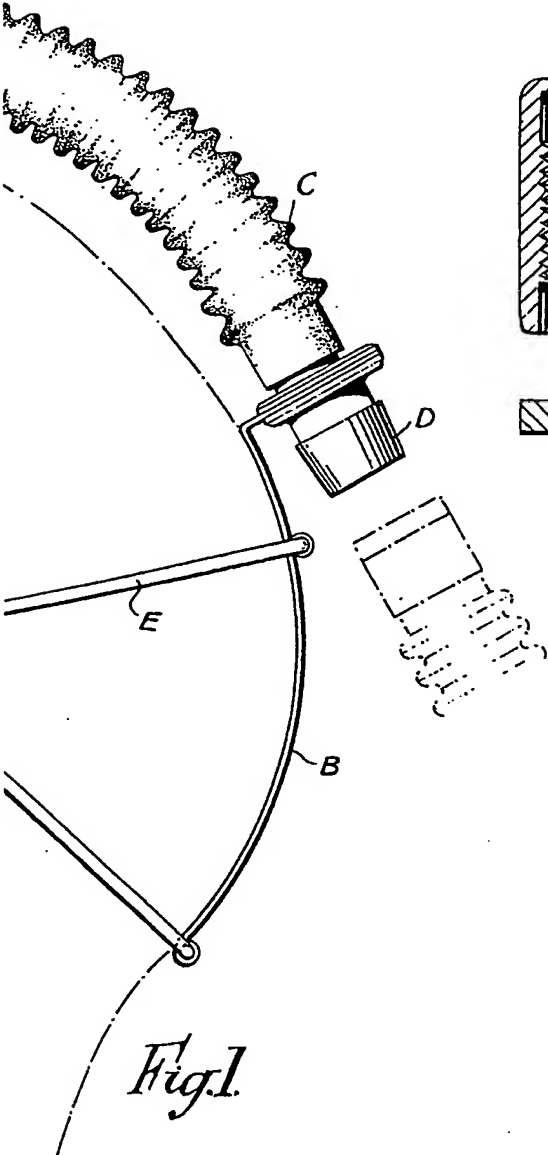


Fig. 1.

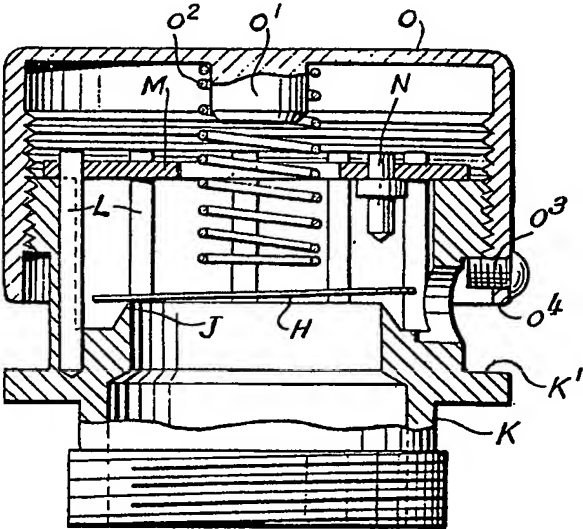


Fig. 2.

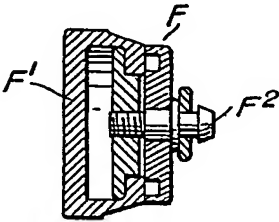


Fig. 3.

684788 COMPLETE SPECIFICATION
 I. SWEET
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 the Original on a reduced scale.

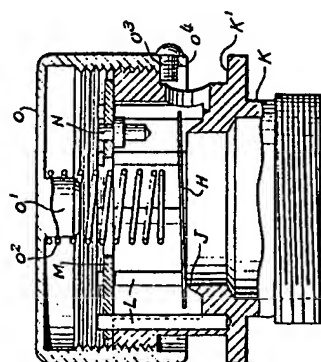
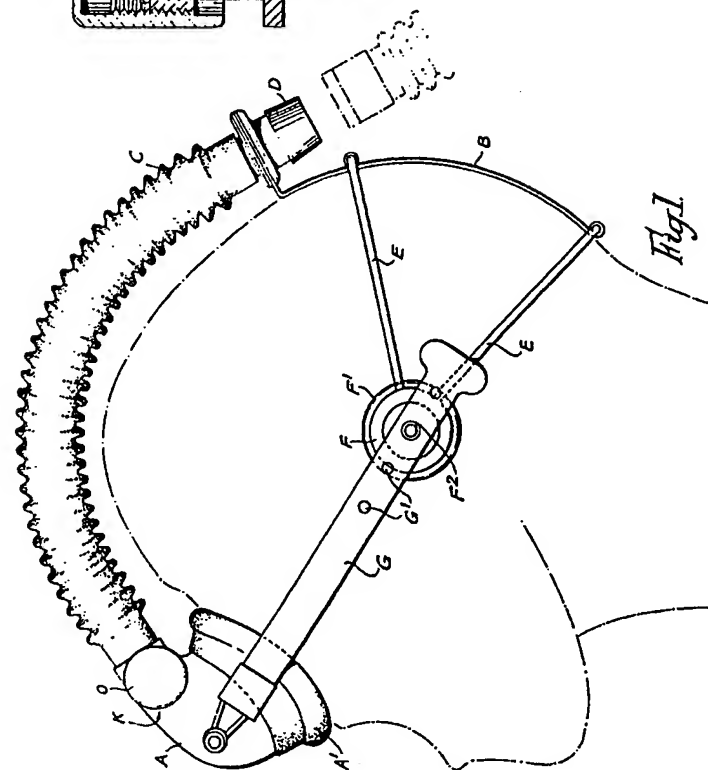


Fig. 2.

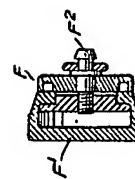


Fig. 3.